

Mumbai University

Question Paper



NETWORK SECURITY

B.Sc.IT: Semester – V
November – 2014

Time: 2 ½ Hours**Total Marks:** 75**N.B.:** (1) All Question are Compulsory.

(2) Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.

(3) Answer To The Same Question Must Be Written Together.

(4) Number To The Right Indicates Marks.

(5) Draw Neat Labeled Diagrams Wherever Necessary.

(6) Use of Non – Programmable Calculator is allowed.

Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is the principle behind One Time Pads? Why is it highly secure? (5)
- (B) Explain the various ways of attack, such as known Plain-Text Attack? (5)
- (C) What are the two basic ways of transforming Plain-Text into Cipher? (5)
- (D) Explain the following principles of security: (5)
 - (i) Non-Repudiation
 - (ii) Integrity

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain CFB (Cipher Feedback) Mode of Algorithms. (5)
- (B) What are the features of Blowfish Algorithm? Explain the steps in Encryption process using Blowfish Algorithm? (5)
- (C) Explain the Principles / Working of IDEA Algorithm. (5)
- (D) Explain in detail the steps in each round of DES. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Compare Symmetric and Asymmetric Key Cryptography using their various characteristics? (5)
- (B) What are the Key Requirement of Message Digest? (5)
- (C) What is the difference between MAC and Message Digester? (5)
- (D) Explain the concept of Digital of Digital Envelop? (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Write short note on Private Key Management. (5)
- (B) What is Cross-Certification? Why is it needed? (5)
- (C) Describe the role of CA in Creation / Revocation of Digital Certificate. (5)
- (D) Explain the steps in Creation of Digital Certificate. (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is buffer overflow attack on SSL? (5)
- (B) What are the objectives of SET, how are they achieved? (5)
- (C) Write a detailed note on VPN (Virtual Private Network). (5)
- (D) What are the attacks on Packet Filter Firewall? (5)

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is Authentication Token? Explain briefly, how it works? (5)
- (B) Explain the Password Based Authentication and the problems associated with it. (5)
- (C) Explain the usage of Smart Cards in Authentication. (5)
- (D) Explain Shared Secret Method of Mutual Authentication. (5)

[TURN OVER]

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A) What are the different types of Criminal Attack? (5)
 - (B) Discuss how Encryption happens in RC5? (5)
 - (C) Explain the working of SHA (Secure Hash Algorithm). (5)
 - (D) Explain PKCS#5 PBE (Password Based Encryption) Standard. (5)
 - (E) Explain the concept of NAT (Network Address Translation). (5)
 - (F) Write a detailed note on Biometric Authentication. (5)
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Question Paper



ASP.NET WITH C#

B.Sc.IT: Semester – V
November – 2014

Time: 2 ½ Hours**Total Marks:** 75**N.B.:** (1) All Question are Compulsory.

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(6) Use of Non – Programmable Calculator is allowed.

Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the similarities and differences between Interfaces and Abstract Classes. (5)
- (B) Write a short note on Assembly. (5)
- (C) Give syntax of foreach loop. Explain with example. (5)
- (D) Write program using Overloaded Constructors. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain Boxing and Unboxing with Reference to Value Type and References Type. (5)
- (B) Explain the four most important Selectors present in CSS. (5)
- (C) Explain the different types of CSS in ASP.NET. (5)
- (D) Write a program using any five Methods / Property of ArrayList Class. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is the difference between List Box and Drop-Down Lists? List and explain any three common properties of these Controls. (5)
- (B) Explain any five Methods / Properties of ListItem Collection Object. (5)
- (C) List and explain the comparison and Logical Operators in C#. (5)
- (D) What is the difference between buttons, Link Buttons and Image Buttons? Explain any three common button attributes. (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Write a program to create a new cookie with the name "Username" and add it to the HttpResponseMessage Object on the click of a button. Set the expiry date of the cookie to One year from Now. (5)
- (B) What is the use of MasterPages in ASP.NET? How a Content Page can be added to a Master Page. (5)
- (C) Explain TreeView and Menu Site Navigation Controls. (5)
- (D) What is the use of Compare Validators? Explain it along with its properties? (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain DetailsView Control. (5)
- (B) What do you mean by Authentication? Explain its types. (5)
- (C) Explain the difference between DataReader in ADO.NET. (5)
- (D) What is the difference between ListView and GridView Control? Explain the ListView Control. (5)

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Create a string array of names. Write a program with LINQ query to display all names from the array that contain the letter "S" and order them in ascending order. Display the query result in a Label. (5)
- (B) Explain the Standard Query operators "Select", "From", "Order By" and "Where" in LINQ. (5)
- (C) Explain the use of UpdateProgress Control in AJAX. (5)
- (D) Write a program using jQuery that hides a paragraph on Click of a Button. (5)

[TURN OVER]

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A) What is Method Overriding? Give an example of it. (5)
- (B) Create a delegate with two init parameter and a return type. Create a class with two Delegate methods multiply and divide. Write a program to implement the Delegate. (5)
- (C) Give general form of switch statement. Explain with example. (5)
- (D) Explain the three Layer Architecture of ASP.NET. (5)
- (E) What is ViewState? How we can work with ViewState in ASP.NET. (5)
- (F) What is AJAX? How is the processing of a web page without AJAX different from the processing of a Web Page with AJAX? (5)
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Question Paper



SOFTWARE TESTING

B.Sc.IT: Semester – V
November – 2014

Time: 2 ½ Hours**Total Marks:** 75**N.B.:** (1) All Question are Compulsory.

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(5) Draw Neat Labeled Diagrams Wherever Necessary.

(6) Use of Non – Programmable Calculator is allowed.

Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) State phases of Fundamental Test Process. Explain Planning and Control. (5)
- (B) What is Quality? Explain Quality Viewpoints for Producing and Buying Software. (5)
- (C) Write a note on Psychology of Testing. (5)
- (D) State Principles of Software Testing. Explain in detail any two. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain Lifecycle Testing for Iterative Model & RAD model. (5)
- (B) What is Integration Testing? List and explain the approaches Integration Testing. (5)
- (C) Explain Triggers for Maintenance Testing. (5)
- (D) Explain Conformance Directed Testing Levels. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) List down the phases of Formal Reviews. Explain any two phases in detail. (5)
- (B) Explain the characteristics and objectives of: (5)
 - (i) Walkthrough
 - (ii) Inspection
 - (iii) Audit
 - (iv) Technical Review
 - (v) Peer Review
- (C) Explain the factors for successful performance of Reviews. (5)
- (D) List down the types of Static Analysis by Tools. Explain them. (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain, how is Equivalence Class Partitioning different from BVA? (5)
- (B) Explain Experience based testing and its types. (5)
- (C) Explain State Transition based testing with an example. (5)
- (D) Define Cyclomatic Complexity: (5)

Draw a Program Graph to Graphically represent the given Code

```
Dim i as Integer
Dim n as Integer

i=1
n=1
while(i<=5)
{
    n=n*i
    i=i+1
}
output n
```

Also find the Cyclomatic Complexity of the Program Graph.

[TURN OVER]

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is Risk Based Testing? How is Product Risk different from Project Risk? What is Risk Based Testing? How is Product Risk different from Project Risk? (5)
- (B) Explain Incident Report Lifecycle with the help of a diagram. (5)
- (C) What is Test Control and explain Configuration Management? (5)
- (D) Explain Test Organization. What are the Factors affecting Test Efforts? (5)

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are the benefits and risks of using tools? Explain. (5)
- (B) Explain dynamic analysis tools with performance testing. (5)
- (C) State features of test design tools and data preparation tools. (5)
- (D) List down the tool support for management testing. Explain any two. (5)

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A) Define the terms Risk, Error, Defect, Failure and Quality. (5)
 - (B) Explain V – Model of testing? Explain its advantages. (5)
 - (C) What is Static Testing? Explain the importance of Static Testing. (5)
 - (D) Justify "100% Condition Coverage implies 100% Decision Coverage" giving an example. (5)
 - (E) Explain various types of test strategies? How to pick up the best type of strategies for success? (5)
 - (F) Describe any two tools in Static Testing. (5)
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ADVANCED JAVA

B.Sc.IT: Semester – V
November – 2014

Time: 2 ½ Hours

Total Marks: 75

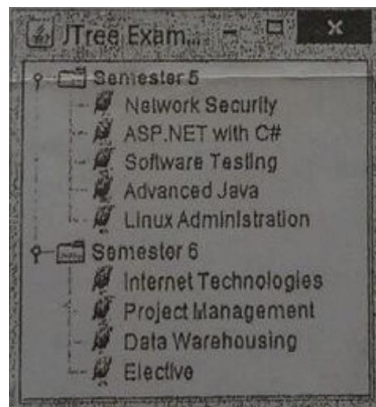
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Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the Java Delegation Event Model. What are the two steps in using the Java Delegation Event Mode? (5)
 (B) Explain Adapter Classes and Inner Classes. (5)
 (C) Explain the following methods when working with Frame Windows: – (5)
 (i) `setSize`
 (ii) `getSize`
 (iii) `setVisible`
 (iv) `setTitle`
 (v) `windowClosing`
 (D) What are the different LayoutManager Classes in Java? Explain CardLayout with example. (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain Root Pane, Glass Pane, Layered Pane, Content Pane and Desktop Pane. (5)
 (B) Distinguish between Abstract Window Toolkit and Java Foundation Classes. (5)
 (C) Explain JPopupMenu Class with example. (5)
 (D) Write a program using JTree to generate the following Hierarchical Structure. Assume the image file "leaf.jpg". (5)

**Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)**

- (A) What are Servlets? What are the advantages of Servlets over CGI? (5)
 (B) What is RequestDispatcher? What are its methods? Using RequestDispatcher write the code for the following: (5)
 "index.html" file with two text boxes to enter username and password and a login button. Login.java servlet class to process the response. If the password is "servlet" it should forward the request to WelcomeServlet.java which displays "Welcome<Username>". If the password is not "servlet", Login.java should display "Sorry Username or password error!!!" web.xml, the deployment descriptor file that contains the information about the servlet.
 (C) Explain GenericServlet with its constructors and methods. (5)
 (D) Write a Servlet Application to find the sum of digits of the number entered by the user through the HTML Form. (5)

[TURN OVER]

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What is JDBC Driver? Explain the types of JDBC Drivers. (5)
- (B) Explain the JDBC Architecture. (5)
- (C) What are the advantages and disadvantages of Java Server Pages? (5)
- (D) Write a JSP Application that computes the cubes of the numbers from 1 to 10. (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the Model-View-Controller Architecture. (5)
- (B) Explain in detail the phases of JSF Lifecycle. (5)
- (C) Enumerate the benefits of Enterprise Beans. (5)
- (D) Write a Session Bean Code specification that calculates simple interest. Assume the principle, term and rate of interest is entered by the user and the input is passed through a servlet. (5)

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain the Architecture of Hibernate Framework in detail. (5)
- (B) Explain Structure of Hibernate.cfg.xml file. (5)
- (C) What is Value Stack in Struts? State and Explain the Execution Flow of Value Stack. (5)
- (D) Explain interceptors in struts. (5)

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A) What is CheckboxGroup? Explain with example. (5)
- (B) Explain JScrollPane and JScrollBar with example. (5)
- (C) Explain the Life Cycle of Servlet. (5)
- (D) Write a JDBC Program that inserts values in database. [TABLE NAME: Employee, FIELDS: Empid, Name, Dept, Designation] (5)
- (E) What are the different types of Enterprise Beans? Explain. (5)
- (F) What is OGNL? Explain the Execution Flow of OGNL. (5)

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LINUX

ADMINISTRATION

B.Sc.IT: Semester – V
November – 2014

Time: 2 ½ Hours**Total Marks:** 75**N.B.:** (1) All Question are Compulsory.

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(6) Use of Non – Programmable Calculator is allowed.

Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain GRUB.conf file in details. (5)
- (B) What are rc scripts? How rc scripts can be managed? (5)
- (C) State the advantages of using Hierarchical Method for File System Organization. (5)
- (D) How to configure the Source System? (5)

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are cron file? How cron files take care of system tasks? Explain. (5)
- (B) What is DHCP? How is DHCP configured? Explain in details. (5)
- (C) What is use of fstab? Explain contents of fstab. (5)
- (D) State the number of subnets, subnet mask and number of hosts for Class B subnets with 2, 3, 4 and 5 bits. (5)

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain use of telnet, ftp, sync, finger, talk, rlogin services. (5)
- (B) Compare xinetd and xnted Services. Explain standalone services of xinetd. (5)
- (C) What are the steps to configure Linux Firewall packages? (5)
- (D) Distinguish between NFS and SAMBA Server. (5)

Q.4 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) State and explain E-Mail service and its components. (5)
- (B) Explain vsftpd configurations. (5)
- (C) Explain different types of DNS Servers. (5)
- (D) Explain steps of configuring IMAP4. (5)

Q.5 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) Explain Apache Web Server with its features. (5)
- (B) How can a Secure Server be created with SSL? (5)
- (C) Explain configuration of CGI on Apache with script in detail. (5)
- (D) Write a short note on Mailing Lists. (5)

Q.6 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

- (A) What are the advantages of Shadow Password over Traditional Password System? (5)
- (B) Explain rpmquery Command with options. (5)
- (C) Explain how System Administration can create, modify and delete user accounts. (5)
- (D) Explain the following used to set and enforce disk usage quotas: (5)
 - (i) *edquota*
 - (ii) *quota*
 - (iii) *quotaoff*
 - (iv) *quotacheck*
 - (v) *repquota*

[TURN OVER]

Q.7 ATTEMPT ANY THREE QUESTIONS: (15 MARKS)

- (A)** How to install and configure Applications in Linux? (5)
 - (B)** Explain Memory File System and its uses. (5)
 - (C)** Explain IP Address, Netmasking and Subnetting in detail. (5)
 - (D)** Write and explain files used by network configuration. (5)
 - (E)** Which command is used to change the Expiration Policy for user's password? Explain with suitable example. (5)
 - (F)** What is Postfix Mail Server? List the steps for configuring Postfix. (5)
-